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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,432	07/20/2001	Jacob Waugh	13720-105064	2657

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KING & SPALDING
1185 AVENUE OF THE AMERICAS
NEW YORK, NY 10036-4003

EXAMINER

SCHNIZER, RICHARD A

ART UNIT	PAPER NUMBER
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1635

MAIL DATE	DELIVERY MODE
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05/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/910,432

Applicant(s)

WAUGH ET AL.

Examiner

Richard Schnizer, Ph. D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 40-137 is/are pending in the application.
- 4a) Of the above claim(s) 90-137 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 40 and 85 is/are rejected.
- 7) ☒ Claim(s) 41-84 and 86-89 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/4/07 has been entered.

Claims 1-20 and 22-39 were canceled and claims 40-137 were added as requested.

In the Final Rejection mailed 10/4/06, the Office Stated:

"In the response filed 9/7/06, Applicant listed the status of claims 2-4 as "withdrawn". Actually, claims 2-4 are under consideration, and are objected to as depending from a rejected claim but would be allowable if rewritten in independent form incorporating all the limitations of claim 1."

Applicant subsequently filed an RCE and stated that they had rewritten claims 2-4 in independent format in view of the Examiner's indication of allowability. The Examiner regrets that this indication of allowability was in error. See rejection under 35 USC 103 over Wolff in view of Ledebur. However, as previously indicated in the action of 10/4/06, the species of a non-covalent association complex of a positively charged backbone polymer having positively charged branching groups of the formula (gly)_p-RGRDDRRQRRR-(gly)_q (SEQ ID NO:19), a negatively charged backbone comprising a plurality of attached targeting moieties, and a negatively-charged backbone having a plurality of attached BOTOX molecules is free of the art.

As stated in the restriction requirement of 5/19/04, upon allowance of a generic claim, Applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141.

Currently pending claims 40 and 85 are generic.

Claims 41-84 and 86-89 are objected to because they are drawn to non-elected subject matter.

Newly submitted claims 90-137 are directed to kits with the intended use of formulating a pharmaceutical composition and are independent or distinct from the invention originally claimed for the reasons set forth in the restriction requirement of 5/19/04. Further, the limitation of "pharmaceutical composition" requires examination of issues of enablement of therapeutic use, which represents an undue burden, particularly in view of the constellation of drugs embraced in claims 90-137.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 90-137 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 40 and 85 are rejected under 35 U.S.C. 102(b) as being anticipated by Wu et al (J. Biol. Chem. 262(10): 4429-4432, 1987) as evidenced by GenBank Accession No. M77788 (2005).

Wu taught non-covalent complexes of plasmid pSV2 CAT and polylysine, wherein the polylysine comprised an attached asialoorosomucoid targeting ligand. Plasmid pSV2 CAT comprises a selectable marker (beta lactamase, i.e. ampicillin resistance) as evidenced by GenBank Accession No. M77788. The selectable marker is considered to be a persistence factor as required by item (iv) of claims 40 and 85.

This complex meets the limitations of species iii/iv because pSV2-CAT comprises the DNA required by group member 'iii', and the DNA encoding the persistence factor required by group member 'iv'. The plasmid of Wu is double stranded, so group member 'iv' is considered to be the strand of DNA that encodes the selectable marker beta lactamase, and group member 'iii' is considered to be the complementary DNA strand.

Thus Wu anticipates the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 40 and 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolff et al (US 20030236214).

The portions of US 20030236214 relied upon in this rejection are supported by priority document 09/328,975 and are entitled to a filing date of 6/9/1999.

Wolff taught complexes comprising a polynucleotide condensed with a polycation, wherein the charge of the complex is adjusted by addition of a negatively charged polymer. The final charge of the complex can be positive or negative as desired. See abstract. The polynucleotide can be virtually any polynucleotide, including DNA, RNA, ribozymes, and modified oligonucleotides. See paragraph 82. The negatively charged polymer used for charge adjustment can be DNA, RNA, or any of a variety of negatively charged polymers, and can comprise a targeting agent. See paragraphs 81, 103, and 114. Thus Wolff taught a positively charged complex comprising (1) polycation, (2) a DNA, RNA, ribozyme, or modified oligonucleotide, and (3) a third polyanion comprising a targeting moiety.

Wolff did not teach a plurality of targeting agents. However, the number of targeting agents attached to the polyanion is considered to be a matter of design choice and is therefore obvious. Further, at paragraph 65, Wolff indicates that the individual monomers may be modified to contain targeting agents prior to incorporation into a polymer. As such it would be obvious to construct a polymer of such monomers, which polymer would necessarily have a plurality of targeting moieties. So, Wolff renders

obvious an embodiment of the invention comprising items (ii) and (iii) of claims 40 and 85

The following rejection is directed to an embodiment of the generic claims in which item (v) of claims 40 and 85 is construed as a DNA vector with a plurality of attached expression constructs, wherein each expression construct is considered to be a therapeutic agent. In other words, the expression vector is considered to be a negatively charged backbone having a plurality of attached therapeutic agents.

Claims 40 and 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolff et al (US 20030236214) in view of Ledebur et al (WO 99/24596).

The portions of US 20030236214 relied upon in this rejection are supported by priority document 09/328,975 and are entitled to a filing date of 6/9/1999.

Wolff taught complexes comprising a polynucleotide condensed with a polycation, wherein the charge of the complex is adjusted by addition of a negatively charged polymer. The final charge of the complex can be positive or negative as desired. See abstract. The polynucleotide can be virtually any polynucleotide, including DNA, RNA, ribozymes, and modified oligonucleotides. See paragraph 82. The negatively charged polymer used for charge adjustment can be DNA, RNA, or any of a variety of negatively charged polymers, and can comprise a targeting agent. See paragraphs 81, 103, and 114. Thus Wolff taught a positively charged complex comprising (1) polycation, (2) a DNA, RNA, ribozyme, or modified oligonucleotide, and (3) a third polyanion comprising a targeting moiety.

Wolff did not teach a plurality of targeting agents. However, the number of targeting agents attached to the polyanion is considered to be a matter of design choice and is therefore obvious. Further, at paragraph 65, Wolff indicates that the individual monomers may be modified to contain targeting agents prior to incorporation into a polymer. As such it would be obvious to construct a polymer of such monomers, which polymer would necessarily have a plurality of targeting moieties. So, Wolff renders obvious an embodiment of the invention comprising items (ii) and (iii) of claims 40 and

Wolf did not teach a negatively charged backbone with a plurality of attached therapeutic agents.

Ledebur taught a plasmid vector for genetic immunization comprised two therapeutic genes, i.e. a first antigen encoding gene and a second gene encoding an antigen or costimulatory protein. See page 5, lines 22-26; page 6, lines 18 and 19; page 18, lines 1-27; and Fig. 9. This represents a negatively charged backbone (the plasmid strand comprising the two genes) and two attached therapeutic agents, i.e. the two therapeutic genes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the technique of Wolff for delivery of the vector of Ledebur. One would have been motivated to do so because Ledebur suggests the use of polymer based delivery systems at page 5, lines 5-9, and the system of Wolff is intended for nucleic acid delivery in vivo. See paragraphs 20 and 23. Further, it would have been obvious to include in the vector a selectable marker, in view of the teachings of Ledebur at page 2, line 17 to page 3, line 18, which indicate that inclusion of a selectable marker such as

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the neo^r gene is advantageous. The selectable marker can be considered a persistence factor as recited in item (iv) of claims 40 and 85.

Thus, combinations (ii/iii), (ii/iv), (ii/v), (iii/iv), (iii/v), (ii/iii/iv), (ii/iii/v), (iii/iv/v), and (ii/iii/iv/v) are prima facie obvious. The combination (iv,v) is also considered obvious because Ledebur fairly embraces an embodiment of a nucleic acid comprising two therapeutic genes on one strand and a selectable marker on the other strand, as the selectable marker would represent a persistence factor, and the two strands would represent non-identical negatively charged backbones. The strand on which the selectable marker is placed is considered to be a matter of design choice. There are only two choices, and each is considered to be as likely as the other, i.e. they are considered to be equivalents.

Response to Arguments

Applicant's arguments filed 4/4/07 have been fully considered but they are not persuasive, because they do apply to the grounds of rejection set forth above.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner(s) should be directed to Richard Schnizer, whose telephone number is 571-272-0762. The examiner can normally be reached Monday through Friday between the

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hours of 6:00 AM and 3:30. The examiner is off on alternate Fridays, but is sometimes in the office anyway.

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, J. Douglas Schultz, can be reached at (571) 272-0763. The official central fax number is 571-273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

A handwritten signature in black ink, appearing to read 'R. Schnizer', with a stylized flourish at the end.

Richard Schnizer, Ph.D.
Primary Examiner
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